What is claimed is:

1. An impedance measurement system for measuring skin impedance in a small skin region, comprising:

an electrode unit having a plurality of current supply electrodes for supplying a constant current and a plurality of measurement electrodes separate from the current supply electrodes for measuring a response signal of skin;

a current source for supplying the constant current to the current supply electrodes;

a signal processing unit, which is connected to the measurement electrodes, for receiving response signals generated in the skin in response to the applied constant current, for generating a potential difference signal, for removing noise from the potential difference signal, and for amplifying the noise-removed potential difference signal;

a signal conversion unit for converting the potential difference signal received from the signal processing unit from an analog format into a digital format; and

an image display unit for converting the digital potential difference signal into an image signal and for displaying the image signal.

2. The impedance measurement system as claimed in claim 1, wherein the current supply electrodes comprise a first electrode having a cylindrical structure and a second electrode having a cylindrical structure surrounding and concentric with the first electrode,

wherein the measurement electrodes include third and fourth electrodes disposed between the first and second electrodes, the third and fourth electrodes having a cylindrical structure surrounding and concentric with the first electrode.

3. The impedance measurement system as claimed in claim 1, wherein each of the current supply electrodes comprises:

a first electrode having a first side, a second side perpendicular to the first side, and a third side perpendicular to the second side and facing the first side; and

a second electrode having a same shape as the first electrode, the second electrode being disposed separate from the first electrode such that an opening side of the second electrode faces an opening side of the first electrode,

wherein the measurement electrodes are disposed in an inner space defined between the first and second electrodes.

4. The impedance measurement system as claimed in claim 3, wherein the measurement electrodes are disposed perpendicular to the first and second electrodes.

5. The impedance measurement system as claimed in claim 1, wherein each of the measurement electrodes comprises:

a third electrode having a first side, a second side perpendicular to the first side, and a third side perpendicular to the second side and facing the first side; and

a fourth electrode having a same shape as the third electrode, the fourth electrode being disposed separate from the third electrode such that

an opening side of the fourth electrode faces an opening side of the third electrode,

wherein the third and fourth electrodes are disposed between the plurality of current supply electrodes.

6. The impedance measurement system as claimed in claim 5, wherein the third and fourth electrodes are disposed perpendicular to the plurality of current supply electrodes.

7. The impedance measurement system as claimed in claim 1, wherein each of the current supply electrodes comprises:

a first electrode having an oval structure with an opening portion and a predetermined curvature; and

a second electrode having a same shape as the first electrode, the second electrode being disposed separate from the first electrode such that an opening of the second electrode faces an opening of the first electrode,

wherein the measurement electrodes are disposed in an inner space defined between the first and second electrodes.

8. The impedance measurement system as claimed in claim 7, wherein the measurement electrodes are disposed perpendicular to the first and second electrodes.

9. The impedance measurement system as claimed in claim 1, wherein each of the measurement electrodes comprises:

a third electrode having an oval structure with an opening portion and a predetermined curvature; and

a fourth electrode having a same shape as the third electrode, the fourth electrode being disposed separate from the third electrode such that an opening of the fourth electrode faces an opening of the third electrode,

wherein the third and fourth electrodes are disposed between the plurality of current supply electrodes.

10. The impedance measurement system as claimed in claim 9, wherein the third and fourth electrodes are disposed perpendicular to the plurality of current supply electrodes.

11. The impedance measurement system as claimed in claim 1, wherein the current supply electrodes have a flat structure, the measurement electrodes have a flat structure, the current supply electrodes and the measurement electrodes are disposed parallel to each other, and the measurement electrodes are disposed between the current supply electrodes.

12. The impedance measurement system as claimed in claim 3, wherein the electrode unit comprises:

a first electrode distance adjuster for adjusting a distance between the current supply electrodes including:

a first stationary screw line connected to the current supply electrodes, a first rotary screw joined to the first stationary screw line and rotating the first stationary screw line to move the current supply electrodes along the first stationary screw line, and a fixing stud for fixing each of the current supply electrodes to the first stationary screw line; and

a second electrode distance adjuster for adjusting a distance between the measurement electrodes including:

the second electrode distance adjuster includes a second stationary screw line connected to the measurement electrodes, a second rotary screw joined to the second stationary screw line and rotating the second stationary screw line to move the measurement electrodes along the second stationary screw line, and a fixing stud for fixing each of the measurement electrodes to the second stationary screw line,

wherein the first stationary screw line and the second stationary screw line are separated from each other by a predetermined distance and are perpendicular to each other.

13. The impedance measurement system as claimed in claim 5, wherein the electrode unit comprises:

a first electrode distance adjuster for adjusting a distance between the current supply electrodes including:

a first stationary screw line connected to the current supply electrodes, a first rotary screw joined to the first stationary screw line and rotating the first stationary screw line to move the current supply electrodes along the first stationary screw line, and a fixing stud for fixing each of the current supply electrodes to the first stationary screw line; and

a second electrode distance adjuster for adjusting a distance between the measurement electrodes including:

the second electrode distance adjuster includes a second stationary screw line connected to the measurement electrodes, a second rotary screw joined to the second stationary screw line and rotating the second stationary screw line to move the measurement electrodes along the second stationary screw line, and a fixing stud for fixing each of the measurement electrodes to the second stationary screw line,

wherein the first stationary screw line and the second stationary screw line are separated from each other by a predetermined distance and are perpendicular to each other.

14. The impedance measurement system as claimed in claim 7, wherein the electrode unit comprises:

a first electrode distance adjuster for adjusting a distance between the current supply electrodes including:

a first stationary screw line connected to the current supply electrodes, a first rotary screw joined to the first stationary screw line and rotating the first stationary screw line to move the current supply electrodes along the first stationary screw line, and a fixing stud for fixing each of the current supply electrodes to the first stationary screw line; and

a second electrode distance adjuster for adjusting a distance between the measurement electrodes including:

the second electrode distance adjuster includes a second stationary screw line connected to the measurement electrodes, a second rotary screw joined to the second stationary screw line and rotating the second stationary screw line to move the measurement electrodes along the second stationary screw line, and a fixing stud

for fixing each of the measurement electrodes to the second stationary screw line,

wherein the first stationary screw line and the second stationary screw line are separated from each other by a predetermined distance and are perpendicular to each other.

15. The impedance measurement system as claimed in claim 9, wherein the electrode unit comprises:

a first electrode distance adjuster for adjusting a distance between the current supply electrodes including:

a first stationary screw line connected to the current supply electrodes, a first rotary screw joined to the first stationary screw line and rotating the first stationary screw line to move the current supply electrodes along the first stationary screw line, and a fixing stud for fixing each of the current supply electrodes to the first stationary screw line; and

a second electrode distance adjuster for adjusting a distance between the measurement electrodes including:

the second electrode distance adjuster includes a second stationary screw line connected to the measurement electrodes, a second rotary screw joined to the second stationary screw line and rotating the second stationary screw line to move the measurement electrodes along the second stationary screw line, and a fixing stud for fixing each of the measurement electrodes to the second stationary screw line,

wherein the first stationary screw line and the second stationary screw line are separated from each other by a predetermined distance and are perpendicular to each other.

16. The impedance measurement system as claimed in claim 11, wherein the electrode unit comprises:

a stationary screw line connected to the current supply electrodes and the measurement electrodes;

a rotary screw, which is joined to the stationary screw line, for rotating the stationary screw line to move the current supply electrodes and the measurement electrodes along the stationary screw line; and

a fixing stud for fixing each of the current supply electrodes and the measurement electrodes to the stationary screw line.

17. The impedance measurement system as claimed in claim 1, wherein the current source comprises:

an input unit for dividing a voltage received from an external power supply unit into predetermined voltages and for outputting the predetermined voltages;

a current converter for converting each of the predetermined voltages into a constant current regardless of a load;

a current intensity controller for adjusting an intensity of the constant current output from the current converter using variable resistance; and

an output unit for applying the current received from the current converter to the electrode unit.

18. The impedance measurement system as claimed in claim 17, wherein the current converter comprises a plurality of operational amplifiers.

19. The impedance measurement system as claimed in claim 1, wherein the signal processing unit comprises:

a buffer for maintaining input impedance higher than skin resistance and for temporarily storing the response signals;

a potential difference measurer for measuring a potential difference between the measurement electrodes using the response signals and for outputting a potential difference signal;

an offset voltage controller for performing a zero (0) adjustment for the impedance measurement system and for adjusting a direct current (DC) level of the potential difference signal received from the potential difference measurer to shift a measuring range;

an amplifier for amplifying the potential difference signal output from the offset voltage controller up to a predetermined level;

a filter for removing noise from the amplified potential difference signal; and

a phase inverter amplifier for amplifying the noise-filtered potential difference signal and for inverting a phase of the potential difference signal.

20. The impedance measurement system as claimed in claim 19, further comprising: an input unit for receiving the response signals of the skin from the measurement electrodes and for outputting the response signals to the buffer.

21. The impedance measurement system as claimed in claim 19, further comprising: an output unit for transmitting the potential difference signal to the signal conversion unit.

22. The impedance measurement system as claimed in claim 19, wherein the filter is a bandpass filter using a plurality of operational amplifiers and a phase detector circuit.

23. The impedance measurement system as claimed in claim 22, wherein the filter is either a high-pass or low-pass filter depending on a frequency bandwidth of a signal to be measured.

24. The impedance measurement system as claimed in claim 1, wherein the image display unit comprises:

a data analyzer for performing a predetermined operation on the potential difference signal received from the signal conversion unit and for outputting analyzed data;

an operation controller for determining an operation to be performed by the data analyzer; and

a display unit for converting the analyzed data into an image signal and for outputting the image signal.

25. The impedance measurement system as claimed in claim 24, wherein the data analyzer selectively performs an operation on the potential difference signal selected from the group consisting of: averaging, calculating a gradient, differentiating, and integrating.

26. The impedance measurement system as claimed in claim 24, wherein the display unit comprises:

a monitor driver module for converting the potential difference signal into a desired image signal; and

an image display device for displaying the image signal.

27. The impedance measurement system as claimed in claim 26, wherein the image display device is a monitor.

28. An impedance measurement electrode used to measure skin impedance in a small skin region, comprising:

a plurality of current supply electrodes for supplying a constant current to skin; and

a plurality of measurement electrodes, which are separated from the current supply electrodes, for measuring a response signal of the skin,

wherein the measuring electrodes are disposed between the current supply electrodes.

29. The impedance measurement electrode as claimed in claim 28, wherein the measurement electrodes have a thickness of about 0.8 mm.

30. The impedance measurement electrode as claimed in claim 28, wherein the current supply electrodes comprise a first electrode having a cylindrical structure and a second electrode having a cylindrical structure surrounding and concentric with the first electrode,

wherein the measurement electrodes have a cylindrical structure surrounding and concentric with the first electrode, the measurement electrodes being disposed between the first and second electrodes.

31. The impedance measurement electrode as claimed in claim 28, wherein each of the current supply electrodes comprises:

a first electrode having a first side, a second side perpendicular to the first side, and a third side perpendicular to the second side and facing the first side; and

a second electrode having a same shape as the first electrode, the second electrode being disposed separate from the first electrode such that an opening side of the second electrode faces an opening side of the first electrode,

wherein the measurement electrodes are disposed in an inner space defined between the first and second electrodes.

32. The impedance measurement electrode as claimed in claim 31, wherein the measurement electrodes are disposed perpendicular to the first and second electrodes.

33. The impedance measurement electrode as claimed in claim 28, wherein each of the measurement electrodes comprises:

a third electrode having a first side, a second side perpendicular to the first side, and a third side perpendicular to the second side and facing the first side; and

a fourth electrode having a same shape as the third electrode, the fourth electrode being disposed separate from the third electrode such that an opening side of the fourth electrode faces an opening side of the third electrode,

wherein the third and fourth electrodes are disposed between the plurality of current supply electrodes.

34. The impedance measurement electrode as claimed in claim 33, wherein the third and fourth electrodes are disposed perpendicular to the plurality of current supply electrodes.

35. The impedance measurement electrode as claimed in claim 28, wherein each of the current supply electrodes comprises:

a first electrode having an oval structure with an opening portion and a predetermined curvature; and

a second electrode having a same shape as the first electrode, the second electrode being disposed separate from the first electrode such that an opening of the second electrode faces an opening of the first electrode, and

wherein the measurement electrodes are disposed in an inner space defined between the first and second electrodes.

36. The impedance measurement electrode as claimed in claim 35, wherein the measurement electrodes are disposed perpendicular to the first and second electrodes.

37. The impedance measurement electrode as claimed in claim 28, wherein each of the measurement electrodes comprises:

a third electrode having an oval structure with an opening portion and a predetermined curvature; and

a fourth electrode having a same shape as the third electrode, the fourth electrode being disposed separate from the third electrode such that an opening of the fourth electrode faces an opening of the third electrode,

wherein the third and fourth electrodes are disposed between the plurality of current supply electrodes.

38. The impedance measurement electrode as claimed in claim 37, wherein the third and fourth electrodes are disposed perpendicular to the plurality of current supply electrodes.

39. The impedance measurement electrode as claimed in claim 31, wherein a normal line of the opening portion of each current supply electrode is perpendicular to a normal line of the opening portion of each measurement electrode.

40. The impedance measurement electrode as claimed in claim 33, wherein a normal line of the opening portion of each current supply electrode is perpendicular to a normal line of the opening portion of each measurement electrode.

41. The impedance measurement electrode as claimed in claim 31, further comprising:

a first electrode distance adjuster for adjusting a distance between the current supply electrodes including:

a first stationary screw line connected to the current supply electrodes, a first rotary screw joined to the first stationary screw line and rotating the first stationary screw line to move the current supply electrodes along the first stationary screw line, and a fixing stud for

fixing each of the current supply electrodes to the first stationary screw line; and

a second electrode distance adjuster for adjusting a distance between the measurement electrodes including:

the second electrode distance adjuster includes a second stationary screw line connected to the measurement electrodes, a second rotary screw joined to the second stationary screw line and rotating the second stationary screw line to move the measurement electrodes along the second stationary screw line, and a fixing stud for fixing each of the measurement electrodes to the second stationary screw line,

wherein the first stationary screw line and the second stationary screw line are separated from each other by a predetermined distance and are perpendicular to each other.

42. The impedance measurement electrode as claimed in claim 33, further comprising:

a first electrode distance adjuster for adjusting a distance between the current supply electrodes including:

a first stationary screw line connected to the current supply electrodes, a first rotary screw joined to the first stationary screw line and rotating the first stationary screw line to move the current supply electrodes along the first stationary screw line, and a fixing stud for fixing each of the current supply electrodes to the first stationary screw line; and

a second electrode distance adjuster for adjusting a distance between the measurement electrodes including:

the second electrode distance adjuster includes a second stationary screw line connected to the measurement electrodes, a second rotary screw joined to the second stationary screw line and rotating the second stationary screw line to move the measurement electrodes along the second stationary screw line, and a fixing stud for fixing each of the measurement electrodes to the second stationary screw line,

wherein the first stationary screw line and the second stationary screw line are separated from each other by a predetermined distance and are perpendicular to each other.

43. The impedance measurement electrode as claimed in claim 35, further comprising:

a first electrode distance adjuster for adjusting a distance between the current supply electrodes including:

a first stationary screw line connected to the current supply electrodes, a first rotary screw joined to the first stationary screw line and rotating the first stationary screw line to move the current supply electrodes along the first stationary screw line, and a fixing stud for fixing each of the current supply electrodes to the first stationary screw line; and

a second electrode distance adjuster for adjusting a distance between the measurement electrodes including:

the second electrode distance adjuster includes a second stationary screw line connected to the measurement electrodes, a

second rotary screw joined to the second stationary screw line and rotating the second stationary screw line to move the measurement electrodes along the second stationary screw line, and a fixing stud for fixing each of the measurement electrodes to the second stationary screw line,

wherein the first stationary screw line and the second stationary screw line are separated from each other by a predetermined distance and are perpendicular to each other.

44. The impedance measurement electrode of claim 37, further comprising:

a first electrode distance adjuster for adjusting a distance between the current supply electrodes including:

a first stationary screw line connected to the current supply electrodes, a first rotary screw joined to the first stationary screw line and rotating the first stationary screw line to move the current supply electrodes along the first stationary screw line, and a fixing stud for

fixing each of the current supply electrodes to the first stationary screw line; and

a second electrode distance adjuster for adjusting a distance between the measurement electrodes including:

the second electrode distance adjuster includes a second stationary screw line connected to the measurement electrodes, a second rotary screw joined to the second stationary screw line and rotating the second stationary screw line to move the measurement electrodes along the second stationary screw line, and a fixing stud for fixing each of the measurement electrodes to the second stationary screw line,

wherein the first stationary screw line and the second stationary screw line are separated from each other by a predetermined distance and are perpendicular to each other.

45. The impedance measurement electrode as claimed in claim 30, wherein a distance between the measurement electrodes is less than about 5 mm.

46. The impedance measurement electrode as claimed in claim 31, wherein a distance between the measurement electrodes is less than about 5 mm.

47. The impedance measurement electrode as claimed in claim 33, wherein a distance between the measurement electrodes is less than about 5 mm.

48. The impedance measurement electrode as claimed in claim 35, wherein a distance between the measurement electrodes is less than about 5 mm.

49. The impedance measurement electrode as claimed in claim 37, wherein a distance between the measurement electrodes is less than about 5 mm.

50. The impedance measurement electrode as claimed in claim 28, wherein the current supply electrodes and the measurement electrodes comprise flat structure electrodes disposed in parallel, and the measurement electrodes are disposed between the current supply electrodes.

51. The impedance measurement electrode as claimed in claim 50, further comprising:

a stationary screw line connected to the current supply electrodes and the measurement electrodes;

a rotary screw, which is joined to the stationary screw line, for rotating the stationary screw line to move the current supply electrodes and the measurement electrodes along the stationary screw line; and

a fixing stud for fixing each of the current supply electrodes and the measurement electrodes to the stationary screw line.

52. The impedance measurement electrode as claimed in claim 50, wherein a distance between the measurement electrodes is less than about 5 mm.